



Doggone Insect Pests of Dogwood!

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Dogwoods, grown as trees or shrubs, are popular ornamental landscape plants. Flowering dogwood (*Cornus florida*) (and its cultivars), Kousa dogwood (*C. kousa*) and Cornelian cherry (*C. mas*) are the most common tree forms, but a number of shrubs are also available. Among other things, those smaller plants have colorful twigs—red, purple, or yellow—that provide vibrant winter interest. Unfortunately, dogwoods are prone to several common pests. In our feature article last year (Vol. 21, No. 3), we discussed dogwood anthracnose, a disease that has severely diminished native and planted populations of *C. florida* in the East. Here we cover three key insect pests listed in the Cornell Guidelines: the dogwood borer, the dogwood sawfly and cottony maple leaf scale.

Dogwood Borer, *Synanthedon scitula* (123)

Symptoms: The dogwood borer is the most damaging insect pest of dogwood, primarily flowering dogwood. Kousa dogwood is more resistant to borers than flowering dogwood. It most commonly attacks dogwoods that have been wounded by lawn mowers. Apple, oak, hickory, cherry, birch, willow, mountainash, and hazel are other known hosts. Brown frass around bark cracks and wounds is a common first symptom of attack. Adventitious growth may occur at the entry sites. Branches and small trees may die outright.



Damage from dogwood borer © John A. Weidhass, Virginia Polytechnic Institute and State University, Bugwood.org

Signs: The adult moths resemble wasps because of their clear wings. They are $\frac{3}{8}$ inch in length and have two gold bands on their bluish-black abdomens. Their wingspan is $\frac{3}{4}$ of an inch and they have yellow banded legs. Remove the bark near wounds to see the larvae which may be up to $\frac{1}{2}$ inch long. They are white with brown heads and have prolegs with two rows of hooks each. The amber-colored pupal cases can remain protruding from the bark up to a year after adult emergence.



Dogwood borer adult © James Solomon, USDA Forest Service, Bugwood.org

Life History: The larvae overwinter under the bark. After pupating, the adult moths appear beginning in June and emergence occurs over a period of three months. The females mate and lay eggs on bark. The adults are attracted to damaged areas to lay eggs so one way to minimize attack is to avoid wounding or injuring the tree

in any way. The larvae hatch and then crawl for short distances to find good points of entrance into the tree (usually a wound, scar, or crotch of a limb). Damage is caused by the larvae burrowing in the cambium. In the inner bark, the larvae remain until the following season. There is only one generation per year but borers may be found in various stages of development throughout most of the year because eggs are laid over most of the growing season.



Bark near wound at base of a flowering dogwood removed to expose a dogwood borer larva © James Solomon, USDA Forest Service, Bugwood.org

Management: To prevent an infestation of dogwood borers, keep trees growing vigorously. Protect dogwoods from lawnmower damage by mulching around the bases of trees. Avoid pruning any time from June through August and if any wounding occurs, cover those wounds promptly with a commercial wound dressing or white latex paint. When planting dogwoods, don't plant dogwood trees that have cankers on the trunks and consider using resistant species such as Kousa dogwood.

Parasites and predators have been identified but they don't provide enough suppression of borer populations and an insecticide application may be warranted. Apply a registered pesticide in mid-May to mid-June (148–700 GDD₅₀) for the borers in the bark. To treat the adults, pheromone lure traps are useful to determine spray timing—treat 10 days after first moth is trapped and again after six weeks if the clear-winged moths continue to be trapped.

Dogwood Sawfly, *Macremphytus tarsatus* (55)

Symptoms: The larvae of the dogwood sawfly are the immature stage of a wasp and are pests of various dogwoods. Their preferred hosts are gray dogwood (*C. racemosa*) and red osier (*C. sericea*) but they will also feed on other dogwoods as well.

Signs: The larvae skeletonize the leaves and sometimes only



Young dogwood sawfly larva © Kent Loeffler, Cornell University

the midveins of the leaves remain by the end of the season. The larvae of this insect go through several different color changes as they mature from one instar to the next. The newly hatched larvae look like small amber caterpillars. After their second molt they are covered in a waxy, powdery material which they retain through several more instars. The caterpillar-like larvae have an interesting way of collecting and curling under leaves during the day. During their final molt they shed this outer white “coat” and change appearance again. The fully mature larvae are about 1 inch long with a yellow body with black spots.



Dogwood sawfly larvae on the underside of *Cornus sanguinea* 'Midwinter Fire' leaf in August © Dan Gilrein



Late instar dogwood sawfly larvae in September covered in a waxy, powdery material before their final molt © Dennis VanEnglesdorp

Life History: The overwintering stage, the prepupae, pupate in the spring. Adult wasps emerge, mate and lay eggs in the leaves, in rows along the leaf veins from May to July. The early instars feed gregariously and skeletonize the leaves. The larger larvae eat the entire leaf, leaving only the midvein. After their final molt they begin to move about, looking for overwintering sites of rotted wood where they spend the winter as pre-pupae. In addition to logs, the larvae may also burrow into outside wooden furniture or wooden structures to transition to pre-pupae for overwintering. This can cause a mess of secondary problems, especially when woodpeckers “attack” the wood in search of them. There is one generation per year.

Management: Monitor susceptible dogwoods beginning in late June. At the first sign of damage and or the sawflies, themselves, pick off the larvae. This pest isn't usually of much concern to plant survival because defoliation occurs late in the season. However, if necessary you can treat in July (1151–1500 GDD₅₀) with a registered pesticide. Remember Bt is not effective on sawfly larvae. Dan Gilrein suggests Conserve and other labeled materials should work well if there are too many to remove by hand.

Cottony Maple Leaf Scale, *Pulvinaria acericola* (163)

Symptoms: Contrary to what the name of this insect might imply, the cottony maple leaf scale actually has a wide host range that includes dogwoods as well as maple, holly, andromeda and sweet gum. Populations of this insect may become so large that they cause intolerable accumulation of honeydew and sooty mold on host plants and on cars, decks, and lawn furniture beneath them. Premature leaf drop and sometimes even the death of twigs and branches are also common consequences.

Signs: The brown female scales are more or less circular (about 1/8 inch in diameter and slightly convex) and are found under the leaves. They produce cottony white egg masses (1/4 inch long) containing white or pale yellow eggs. Once hatched the crawlers are quite small (about the size of the period at the end of this sentence), pale brown to tan in color and barely distinguishable from the color of healthy leaves.



Closeup of cottony maple leaf scale with white ovisacs on flowering dogwood leaf in June © Dawn Dailey O'Brien

Heavy feeding by large populations of immature scales leads to the production of honeydew that will, in turn, cause sooty mold. The overwintering nymphs are medium to dark brown, oval and rather flat and camouflaged well against the bark, so are rarely seen.

Note: A related scale, the cottony maple scale (*Pulvinaria innumerabilis*), looks similar and has a similar life cycle, but it is found on the branches of host plants instead of the leaves.

Life History: In the early spring (April and May) the scales move to the leaves where they lay their eggs in the cottony masses. After the eggs hatch, usually by the end of June, the nymphs scatter on the leaves and spend the summer settled along the midribs and larger veins. The young scales settle on leaves to feed for a time, growing larger through the rest of the season. By autumn, before the leaves fall, they move onto twigs to overwinter.

Management: Wash off egg masses, where practical or possible. Minimize nitrogen fertilizer use around infested plants. There are several parasites and predators that are usually effective in suppressing outbreaks. Even unfavorable weather conditions (heavy rain and wind) can dislodge the immature scales, which are unable to crawl back onto the plant.

In unusual cases where the population is not kept in check, treat in late June and July (802–1265 GDD₅₀) when crawlers appear. Crawlers can be washed off the leaves as well but that strategy won't be as effective as a chemical treatment. Applications of dormant oil can be made in the spring before bud break. Alternatively imidacloprid (fall or early spring soil treatment, where allowed) have been effective for some soft scales. One treatment with good coverage should be adequate.



Closeup of cottony maple leaf scale crawlers © Dan Gilrein